

# Christine Guy Schnittka

203 Tahoma Rd.  
Lexington, KY 40503

Email: [christine.schnittka@uky.edu](mailto:christine.schnittka@uky.edu)

Website: <http://www.uky.edu/~csc222/home.htm>

Office: (859) 257-1979

Home: (859) 278-9060

Cell: (434) 996-7095

## Academic Degrees

Ph.D. (May, 2009). University of Virginia, Charlottesville, VA. Science Education.

*Dissertation Research:* Engineering Design Activities and Conceptual Change in Middle School Science

M.E. (May, 1992). University of Virginia, Charlottesville, VA. Mechanical and Aerospace Engineering.

B.M.E. (March, 1986). Auburn University, Auburn, AL. Mechanical Engineering.

## University Teaching and Research Experience

2009 – present: **Assistant Professor**, College of Education, University of Kentucky, Lexington, KY.

2004 - 2007: **Graduate Assistant**, Curry School of Education, University of Virginia, Charlottesville, VA.

Supervised, mentored, and evaluated 24 pre-service secondary science teachers. Conducted research related to the nature of science and educational technology integration. Edited and illustrated manuscripts for publication. Presented research papers at local and national education conferences. Conducted workshops for in-service teachers. Designed and painted 150 foot long mural on history of science. Instructed or assisted in instruction of undergraduate and graduate courses:

- Secondary Science Teaching Associateship, fall 2006
- Student Teaching Associateship Seminar, fall 2004, fall 2005, fall 2006
- Secondary Science Methods Lab, spring 2005, spring 2006
- Secondary Science Methods, fall 2004- spring 2005
- Creativity and New Product Development, fall 2004- spring 2005

## K-12 Teaching and Administration Experience

2007 – 2008: **Math and Science Teacher**, Walton Middle School, Charlottesville, VA.

Taught one block of 6<sup>th</sup> grade science and four sections of a 6<sup>th</sup> grade math exploratory. Applied techniques of technology integration, nature of science instruction, engineering education, and inquiry as researched while a graduate assistant.

1995 – 2004: **Science Teacher, Administrator, and Co-Founder**, Village School, Charlottesville, VA.

Worked with team of teachers to research, develop, establish, and administer highly-successful middle school for girls in grades 5-8. Developed curriculum and taught science and technology for grades 5-8, which included life, earth, space, physical sciences, computer technology, and engineering principles. Emphasized applied science, outdoor education, the history and nature of science, and project-based learning. Organized and conducted annual field trips to islands in the Chesapeake Bay for 6<sup>th</sup> and 8<sup>th</sup> grade students. Established pre-engineering laboratory for 8<sup>th</sup> grade students. Established and administered the school's computer network, website, and annual video yearbook creation and production.

1997 – 2004: (summers) **Science Teacher**, Summer Enrichment Program, University of Virginia.

Developed curriculum for and taught several unique science and engineering courses to gifted middle school students from around the country including “The History of Electricity” and “The Notion of Motion.”

## Engineering Experience

1992 – 1993: **Research Assistant**, Biomedical Engineering, University of Virginia, Charlottesville, VA.

Created finite element analysis of a catheter used in a magnetic stereotaxis system for neurosurgical applications.

1985: (summer) **Computer-Aided Designer**, P&H Harnishfeger, Milwaukee, WI.

Performed CAD drafting of engine components.

1982 – 1984: **Research Assistant**, International Business Machines, Research Triangle Park, NC.

Worked in several areas of computer PC manufacturing: robotic gripper design, CAD, keyboard assembly tool design, connector testing equipment design, and fax machine assembly design.

## Refereed Publications

Schnittka, C. G., & Bell, R. L. (2009). Preservice biology teachers' use of interactive display systems to support reforms-based science instruction. *Contemporary Issues in Technology and Teacher Education*, 9(2). Retrieved from <http://www.citejournal.org/vol9/iss2/science/article1.cfm>

Richards, L., Hallock, A., & Schnittka, C.G. (2007). Getting them early: Teaching engineering design in middle schools. *International Journal of Engineering Education*, 25, 874-883.

Schnittka, C.G. (2006). Creating a timeline of science history in your classroom. *Journal of Virginia Science Education*, 1(1), 72-78.

Schnittka, C.G. (2006). Putting nanotechnology under the microscope. *The Science Teacher*, 73(9), 12.

Schnittka, C.G. (2006). Learning lessons from estuaries. *The Science Teacher*, 73(1), 31-35.

## Proceedings

Schnittka, C.G., Bell, R.L., & Richards, L.G. (2009, June). Encouraging conceptual change in science through the use of engineering design in middle school. *Proceedings of the American Society of Engineering Education*, Austin, TX.

Schnittka, C.G., & Bell, R.L. (2009, April). PowerPoint in the science classroom: Reforms-based instruction or high-tech chalk & talk? *Proceedings of the National Association for Research in Science Teaching*, Garden Grove, CA.

Schnittka, C.G., & Richards, L. (2008, June). Teacher and student feedback about engineering design in middle school science classrooms: A pilot study. *Proceedings of the American Society of Engineering Education*, Pittsburg, PA.

Schnittka, C., Binns, I.C., & Bell, R.L. (2008, March). Preservice biology teachers' use of interactive display systems: Reform-based teaching or chalk and talk? *Proceedings of the Annual Meeting of the National Association for Research in Science Teaching*, Baltimore, MD.

Binns, I.C., Schnittka, C., & Bell, R.L. (2008, January). PowerPoint: Encouraging high-tech chalk & talk or reforms-based science instruction? *Proceedings of the Annual Meeting of the Association for Science Teacher Education*, St. Louis, MO.

Binns, I.C., Schnittka, C.G., Bell, R.L., & Toti, D. (2007, March). Preservice science teachers' nature of science instruction and its impact on pupil learning. *Proceedings of the National Association for Research in Science Teaching*, New Orleans, LA.

Schnittka, C.G., Bell, R.L., Farquhar, H. (2007, January). Preservice teachers' use of interactive display systems to support reforms-based science instruction. *Proceedings of the Association for Science Teacher Education*, Clearwater, FL.

## Book Chapters

Bell, R.L., & Schnittka, C.G. (2007). Scientific laws and the reader's relics. In R.L. Bell, *Teaching the Nature of Science through Process Skills*. Boston: Allyn & Bacon.

Bell, R.L., & Schnittka, C.G. (2007). Patterns, patterns everywhere. In R.L. Bell, *Teaching the Nature of Science through Process Skills*. Boston: Allyn & Bacon.

Bell, R.L., & Schnittka, C.G. (2007). Not just another science experiment. In R.L. Bell, *Teaching the Nature of Science through Process Skills*. Boston: Allyn & Bacon.

Bell, R.L., & Schnittka, C.G. (2007). Subjectivity and the boiling point of water. In R.L. Bell, *Teaching the Nature of Science through Process Skills*. Boston: Allyn & Bacon.

## Technical Illustrations

Bell, L. & Park, J. (2008). Digital images and video for teaching science, in R.L. Bell, J. Gess-Newsome & J. Luft (Eds.), *Technology in the secondary science classroom* (p.15). Arlington, VA: NSTA Press.

Bell, R.L. (2007) *Teaching the Nature of Science through Process Skills*, Boston: Allyn & Bacon.

Murphy, E., & Bell, R.L. (2005). How far are the stars? *The Science Teacher*, 72(2), 38-43.

Binns, I.C., & Bell, R.L. (2005). Animating cell mitosis and meiosis, in R.L. Bell & J. Garofalo (Eds.), *NETS for Students* (pp. 67-73), Eugene, OR: ISTE.

## Presentations

Schnittka, C.G., & Bell, R.L. (2009, March). *Save the penguins: Engineering design in the science classroom*. A paper presented at the National Meeting of the National Science Teachers Association, New Orleans, LA.

Richards, L.G., & Schnittka, C.G. (2007, June). *Engineering teaching kits: Bringing engineering design in to middle schools*. A paper presented at the Annual Meeting of the American Society of Engineering Education, Honolulu, HI.

Binns, I.C., Schnittka, C.G., Bell, R.L., & Toti, D. (2007, April). *Preservice science teachers' nature of science instruction and its impact on pupil learning*. A paper presented at the Annual Meeting of the National Association for Research in Science Teaching, New Orleans, LA.

Bell, R.L, Schnittka, C.G., Farquhar, H. (2007, January). *Preservice teachers' use of interactive display systems to support reforms-based science instruction*. A paper presented at the Annual Meeting of the Association for Science Teacher Education, Clearwater, FL.

Schnittka, C.G., Green, J., Skeeles-Worley, A., Sutphen, B, Bell, R.L. (2006, November). *Teaching the nature of science through history*. A presentation at the Annual Meeting of the Virginia Association of Science Teachers, Richmond, VA.

Schnittka, C.G. (2006, November). *Survivor Chesapeake: Take your students to an island!* A paper presented at the Annual Meeting of the Virginia Association of Science Teachers, Richmond, VA.

Bell, R.L., Binns, I., Schnittka, C.G. (2006, January). *Preservice science teachers' conceptions of the NOS: Impacts on classroom practice*. A paper presented at the Annual Meeting of the Association for Science Teacher Education, Portland, OR.

Bell, R.L., Binns, I., Smetana, L, & Schnittka, C.G. (2005, November). *Technology showcase: Great ideas for teaching science with technology*. A presentation at the Annual Meeting of the Virginia Association of Science Teachers, Roanoke, VA.

Bell, R.L., Schnittka, C.G. (2005, November). *Bringing the nature of science into your classroom*. A presentation at the Annual Meeting of the Virginia Association of Science Teachers, Roanoke, VA.

Schnittka, C.G. (2005, November). *Engaging students through the history of science: Bring it back to life!* A presentation at the Annual Meeting of the Virginia Association of Science Teachers, Roanoke, VA.

Bell, R.L., Binns, I.C., Schnittka, C.G., & Smetana, L. (2005, October). *The process skills-based approach to nature of science instruction: Impact on preservice teachers' beliefs and instructional practices*. A paper presented at the Annual Meeting of the Association for Science Teacher Education, Mid-Atlantic Region, Breaks, VA.

Bell, R. L., Toti, D., & Schnittka, C.G. (2005, April). *Incorporating nature of science instruction in the classroom*. A paper presented at the National Meeting of the National Science Teachers Association, Dallas, TX.

Bell, R. L., Toti, D., & Schnittka, C.G. (2004, December). *High-tech, low-stress activities for effective science instruction*. A presentation at the Annual Meeting of the National Science Teachers Association, Eastern Region, Richmond, VA.

## Workshops

Schnittka, C.G., Richards, L.G., & Donohue, S. (2009). *Engineering in K12 Education: Learning Science and Mathematics through Guided Inquiry, Conceptual Restructuring, and Engineering Design*. A session in a workshop for teachers. American Society for Engineering Education, Austin, TX, June 13, 2009.

Schnittka, C.G., Richards, L.G., & Groves, J. (2008). *Everyday magic: The wonders of engineering*. A session in a STEM conference for middle school girls. Southwest Virginia Higher Education Center, Abingdon, VA, December 2, 2008.

Richards, L.G. & Schnittka, C.G. (2007). *Bringing engineering into middle schools: Learning science and math through guided inquiry and engineering design*. A session in a workshop for teachers. American Society for Engineering Education, Honolulu, HI, June 23, 2007.

Bell, R.L., & Schnittka, C.G. (2006). *Nature of science: Theories, laws, and other dangerous ideas*. A workshop for teachers. Albemarle County Schools, In-service training, November 6, 2006.

Schnittka, C.G. (2006). *I'm your density*. A workshop presented for the Explorations in Space Science and Astronomy Seminar for the Johns Hopkins University Center for Talented Youth, October 21, 2006.

Schnittka, C.G. (2006). *Observation and inference in science*. A session in a workshop for teachers. Albemarle County Schools, In-service training, August 15, 2006.

Schnittka, C.G. & Richards, L.G. (2006). *Introduction to engineering*. A workshop for middle school girls. Sweet Briar College, Women in Engineering & Technology, August 9, 2006.

Schnittka, C.G. (2006). *Inquiry or not?* A session in a workshop for teachers. James Madison University, Content Teaching Academy, June 26, 2006.

Richards, L.G. & Schnittka, C.G. (2006). *Bringing engineering into middle schools*. A session in a workshop for teachers. American Society for Engineering Education. Chicago, IL, June 17, 2006.

## **Service**

Discussion Leader, University of Kentucky Common Reading Experience, August 2009.

Faculty Advisor, University of Kentucky FUSION (For Unity and Service in our Neighborhood), August 2009.

Editorial Review for *Survey of Engineering*, Great Lakes Press, Inc., 2008.

Secretary, Graduate Student Forum, *Association for Science Teacher Education*, 2007-2008.

Proposal Reviewer, Annual meeting of the *Association for Science Teacher Education*, St. Louis 2008.

Proposal Reviewer, Annual meeting of the *National Association for Research in Science Teaching*, New Orleans 2007, Philadelphia 2010.

Moderator, Annual Meeting of the *American Society for Engineering Education*, Chicago 2006, Honolulu 2007, Austin 2009.

Moderator, Annual Meeting of the *Association for Science Teacher Education*, Portland 2006.

Manuscript Reviewer, *The Science Teacher*, National Science Teachers Association, 2004- present.

Manuscript Reviewer, *School Science and Mathematics*, School Science and Mathematics Association, 2006-present.

Manuscript Reviewer, *Journal of Virginia Science Education*, Virginia Association of Science Teachers, 2006-2009.

Proposal Reviewer, *American Society for Engineering Education*, K-12 Division, ERM Division, 2005-present.

Team Member, the *Virginia Middle School Engineering Education Initiative*, University of Virginia, Charlottesville, VA, 2002-present.

Advisory Member, Accreditation Board for Engineering and Technology, Mechanical Engineering Department, University of Virginia, Charlottesville, VA, 2002-present.

## **Awards & Grants**

The Curry Foundation, University of Virginia: \$5000 dissertation-year award for expenses related to dissertation research, 2008.

American Society for Engineering Education, Educational Research and Methods Division: Apprentice Faculty Award for commitment to innovation in teaching and the potential for a substantial contribution to engineering education. Highly competitive national award providing \$2000 toward travel expenses for the Annual Meeting of ASEE, Honolulu, HI, 2007.

Co-Investigator, The Learning Barge: Environmental + Cultural Ecologies on the Elizabeth River, U.S. Environmental Protection Agency and University of Virginia School of Architecture collaboration, 2006-2007. \$10,000

Virginia Piedmont Technology Council: Red Apple Award for excellence in science and technology teaching given to one teacher in central Virginia, 1999.

The Virginia Power Partnership: \$1250 in awards to fund creative teaching projects; Invention Convention, 1996, Student-Run Physics Show, 1997.

Chesapeake Bay Foundation: Financial awards of nearly \$10,000 for annual class field trips to Fox Island, Smith Island, and Port Isobel, 1996-2003, 2007.

## **Professional Associations**

- American Society for Engineering Education
- Association for Science Teacher Education
- National Association for Research in Science Teaching
- National Science Teachers Association
- School Science and Mathematics Association